

memorandum

DATE: March 15, 2001

REPLY TO
ATTN OF: Office of Environmental Policy and Guidance:Coalgate:6-6075

SUBJECT: Applicability of RCRA Section 3020 to In-Situ Treatment of Groundwater

TO: Distribution

Purpose of this Memo To notify DOE elements that on December 27, 2000, the Environmental Protection Agency (EPA), Office of the Solid Waste issued a memorandum, *Applicability of RCRA Section 3020 to In-Situ Treatment of Ground Water*, further clarifying the applicability of Section 3020 of the Resource Conservation and Recovery Act (RCRA) to reinjection of groundwater which has been treated to remove contaminants.

Discussion The subject memorandum responds to questions received regarding the applicability of RCRA to the reinjection of ground water contaminated with hazardous wastes during cleanups. Of particular concern is the applicability of Section 3020(b) of RCRA to groundwater remedies involving in-situ bioremediation and other forms of in-situ treatment.

Previously, the EPA had issued a memorandum¹ clarifying that the provisions of 3020 rather than LDR provisions [3004(f), (g), and (m)] were applicable to a reinjection of treated ground water, and that reinjection was exempted from Section 3020(a) if part of a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) response action or RCRA corrective action remedy.

Section 3020(a) bans the disposal of hazardous waste by underground injection into a formation which contains an underground source of ground water within one-quarter mile of the injection well.

Section 3020(b) exempts reinjection of treated contaminated ground water from the Section 3020(a) ban and the land disposal restrictions (LDR) if: (1) The reinjection is a CERCLA response action, or part of a RCRA corrective action remedy intended to clean up the contamination; (2) the contaminated ground water is treated to substantially reduce hazardous constituents prior to such reinjection, and (3) the response action or corrective action is part of an legitimate effort to cleanup contamination and is sufficient to protect human health and the environment upon completion.

In the subject memorandum, EPA interprets 3020(b)(2) to require that contaminated groundwater withdrawn from an aquifer be treated prior to reinjection and that treatment be intended to “substantially reduce” hazardous constituents in the ground water. The EPA notes that the *reduction* in contaminant levels may occur either before or after (“in-situ”) reinjection of the ground water into the aquifer.

¹Applicability of Land Disposal Restrictions To RCRA and CERCLA Groundwater Treatment Reinjection Superfund Management Review: Recommendation No. 26, OSWER Directive # 9234.1-06, December 27, 1989.

In the case of “in-situ” bioremediation, amendment of the extracted groundwater (e.g., addition of nutrients, microorganisms, etc., to promote bioremediation) constitutes treatment under RCRA. The EPA considers bioremediation systems to be consistent with RCRA Section 3020(b) treatment requirements as long as the extracted groundwater contaminated with hazardous waste is amended (or otherwise “treated”) before re-injection and the “treatment” is intended to achieve reductions of hazardous constituents concentrations to concentration levels protective of human health and the environment after re-injection.

While the focus of the EPA memorandum is on “in-situ bioremediation”, the Agency notes that the general principles outlined above for bioremediation may, in some cases, be applicable to other “in-situ” treatment systems (i.e., “in-situ” chemical oxidation, “in-situ” flushing, etc.) as long as they too comply with the conditions of 3020(b).

To Access Memo The December 27, 2000, EPA memorandum may be downloaded for viewing and printing at: <http://www.epa.gov/epaoswer/hazwaste/ca/index.htm>.

Contact For further information on the subject memorandum, or RCRA in general, please contact Jerry Coalgate of my staff at (202) 586-6075, fax (202) 586-3915, or e-mail at: jerry.coalgate@eh.doe.gov.



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